

### Amendments to the Claims

This listing of claims replaces all prior versions and listings of claims in the subject application:

#### **Listing of Claims:**

1. (Currently Amended) A device for generating a plurality of electron beams comprising:
  - a) a source of radiation;
  - b) a spatial light modulator having a position so as to modulate said radiation emanating from said source of radiation and being configured to alter radiation modulation characteristics thereof in response to computer control; and
  - c) a photocathode having a position so as to receive said modulated radiation wherein said photocathode simultaneously produces a plurality of electron beams under impact by said modulated radiation as result of said modulation of the radiation by the spatial light modulator, said modulation of the radiation by the spatial light modulator results in the radiation being simultaneously directed in multiple directions to control ~~controls~~ the pattern and directions of the electron beams emitted by the photocathode.
2. (Original) A device as in claim 1 wherein said radiation is uv radiation.
3. (Original) A device as in claim 2 wherein said source of radiation is a mercury arc lamp.
4. (Original) A device as in claim 3 wherein said photocathode is cesium telluride.
5. (Canceled)
6. (Previously Presented) An device as in claim 1 wherein said spatial light modulator is a micromirror array.

7. (Currently Amended) An electron beam lithography system comprising:
- a) a source of radiation;
  - b) a spatial light modulator having a position so as to modulate said radiation emanating from said source of radiation and being configured to alter radiation modulation characteristics thereof in response to computer control;
  - c) a photocathode having a position so as to receive said modulated radiation wherein said photocathode simultaneously produces a plurality of electron beams under impact by said modulated radiation as result of said modulation of the radiation by the spatial light modulator and said modulation of the radiation by the spatial light modulator results in the radiation being simultaneously directed in multiple directions to control ~~controls~~ the pattern and directions of the electron beams emitted by the photocathode; and
  - d) an electron beam optical column having a position so as to receive said plurality of electron beams and to direct said plurality of electron beams onto a target.
8. (Original) A system as in claim 7 wherein said radiation is uv radiation.
9. (Original) A system as in claim 8 wherein said source of radiation is a mercury arc lamp.
10. (Original) A system as in claim 9 wherein said photocathode is cesium telluride.
11. (Canceled)
12. (Previously Presented) A system as in claim 7 wherein said spatial light modulator is a micromirror array.

13. (Currently Amended) A method of producing a plurality of electron beams comprising:
- a) directing radiation onto a spatial light modulator, thereby modulating said radiation, the spatial light modulator being configured to alter radiation modulation characteristics thereof in response to computer control; and
  - b) directing said modulated radiation onto a photocathode thereby simultaneously producing a plurality of electron beams as result of said modulation of the radiation by the spatial light modulator, said computer-controlled modulation of the radiation by the spatial light modulator controls the pattern and directions of the electron beams emitted by the photocathode by simultaneously directing the radiation in multiple directions.
14. (Original) A method as in claim 13 wherein said radiation is uv radiation.
15. (Currently Amended) A method as in claim 14 wherein said ~~source of~~ radiation is generated by a mercury arc lamp.
16. (Original) A method as in claim 15 wherein said photocathode is cesium telluride.
17. (Canceled)
18. (Previously Presented) A method as in claim 13 wherein said spatial light modulator is a micromirror array.
19. (Currently Amended) A method of performing lithography with multiple beams of electrons comprising:
- a) directing radiation onto a spatial light modulator, thereby modulating said radiation, the spatial light modulator being configured to alter radiation modulation characteristics thereof in response to computer control;

- b) directing said modulated radiation onto a photocathode thereby simultaneously producing a plurality of electron beams as result of said modulation of the radiation by the spatial light modulator, said computer-controlled modulation of the radiation by the spatial light modulator controls the pattern and directions of the electron beams emitted by the photocathode by simultaneously directing the radiation in multiple directions; and
- c) directing said plurality of electron beams onto an acceptance region of an electron beam optical column, producing thereby a plurality of electron beams impacting a target located at the target end of said electron beam optical column.

20. (Original) A method as in claim 19 wherein said radiation is uv radiation.

21. (Currently Amended) A method as in claim 20 wherein said ~~source of~~ radiation is generated by a mercury arc lamp.

22. (Original) A method as in claim 21 wherein said photocathode is cesium telluride.

23. (Canceled)

24. (Previously Presented) A method as in claim 19 wherein said spatial light modulator is a micromirror array.

25. (New) A device as in claim 1 wherein said spatial light modulator is configured to simultaneously modulate the radiation in a direction corresponding to each electron beam produced by the photocathode.

26. (New) A system as in claim 7 wherein said spatial light modulator is configured to simultaneously modulate the radiation in a direction corresponding to each electron beam produced by the photocathode.

27. (New) A method as in claim 13 wherein said spatial light modulator is configured to simultaneously modulate the radiation in a direction corresponding to each electron beam produced by the photocathode.

28. (New) A method as in claim 19 wherein said spatial light modulator is configured to simultaneously modulate the radiation in a direction corresponding to each electron beam produced by the photocathode.